WHAT IS CLAIMED IS:

1. A method of producing an electron-emitting device having a carbon fiber, comprising:

(A) applying a liquid which includes dispersed particles onto a substrate;

(B) oxidizing said particles disposed on the substrate and then reducing then; and

(C) a step of forming a carbon fiber by contacting the reduced particles with a carbon containing gas,

wherein each of said particles contains at least two kinds of elements.

2. The method according to claim 1, wherein said particles are an alloy of the two or more kinds of elements.

3. The method according to claim 1, wherein said two or more kinds of elements include Pd and at least one element selected from the group consisting of Fe, Co, Ni, Y, Rh, Pt, La, Ce, Pr, Nd, Gd, Tb, Dy, Ho, Er, and Lu.

4. The method according to claim 3, wherein said particles contain at least one element selected from the group consisting of Fe, Co, Ni, Y, Rh, Pt, La, Ce, Pr, Nd, Gd, Tb, Dy, Ho, Er, and Lu by 5 atm%

or more and 80 atm% or less (atomic percentage) with respect to Pd.

5. The method according to claim 1, wherein said liquid further contains a polymer.

6. The method according to claim 5, wherein said polymer is a water-soluble polymer.

7. The method according to claim 5, wherein said polymer is any one selected from the group consisting of polyvinyl pyrrolidone, polyvinyl alcohol and polyacrylic acids.

8. The method according to claim 7, wherein said polyacrylic acids are any one selected from the group consisting of polyacrylic acid, polymethacrylic acid, and homologue thereof.

9. The method according to claim 5, wherein said polymer is contained by 0.1 wt% or more and 30 wt% or less with respect to said liquid.

10. The method according to claim 5, wherein said polymer is contained by 0.2 wt% or more and 10 wt% or less with respect to said liquid.

11. The method according to claim 1, wherein said average particle size of the particles is 1 nm or more and 100 nm or less.

12. The method according to claim 1, wherein said average particle size of the particles is 1 nm or more and 50 nm or less.

13. The method according to claim 1, wherein said average particle size of the particles is 1 nm or more and 20 nm or less.

14. The method according to claim 5, wherein said polymer covers the particles by average film thickness in a range of 2.5 nm or more and 25 nm or less.

15. The method according to claim 1, wherein said particles are contained by a ratio of 1 g/L or less with respect to said liquid.

16. The method according to claim 1, wherein said particles are contained by a ratio of 0.1 g/L or less with respect to said liquid.

17. The method according to claim 15, wherein said particles are contained by a ratio of 0.01 g/L

or more with respect to said liquid.

18. The method according to claim 1, wherein said liquid further comprises a photosensitive material, and the step (A) further comprises a step of irradiating a region of the coating fim and a step of removing the irradiated region or unirradiated region of the coating film.

19. A method of producing an electron-emitting device having a carbon fiber, comprising:

(A) a step of applying a liquid which includes dispersed particles containing a catalytic metal onto a substrate;

(B) a step of oxidizing the particles diposed on the substrate; and

(C) a step of reducing the particles and forming a carbon fiber by contacting the reduced particles with a carbon containing gas.

20. A method of producing an electron-emitting device having a carbon fiber, comprising

(A) applying a liquid with a polymer and a large number of particles dispersed having catalytic function;

(B) oxidizing the particles disposed on the substrate; and

(C) reducing the oxidized particles and forming a carbon fiber by contacting the reduced particles with a carbon containing gas.

21. The method according to claim 1, wherein said carbon fiber is any one of a carbon nano tube, a graphite nano fiber, an amorphous carbon fiber, and a diamond fiber.

22. A method of producing an electron source having a plurality of electron-emitting devices, wherein said electron-emitting devices are produced by the method of producing an electron-emitting device according to claim 1.

23. A method of producing an image-forming apparatus comprising an electron source, and an image-forming member disposed facing said electron source, wherein said electron source is produced by the method of producing an electron source according to claim 22.

24. An ink for producing a carbon fiber, comprising:

particles containing two or more kinds of elements;

a polymer; and

a dispersion medium for dispersing the particles.

25. The ink for producing a carbon fiber according to claim 24, wherein the two or more kinds of elements include Pd and at least one element selected from the group consisting of Fe, Co, Ni, Y, Rh, Pt, La, Ce, Pr, Nd, Gd, Tb, Dy, Ho, Er, and Lu.

26. The ink for producing a carbon fiber according to claim 24, wherein the polymer is any one selected from the group consisting of polyvinyl pyrrolidone, polyvinyl alcohol and polyacrylic acids.

27. The ink for producing a carbon fiber according to claim 24, wherein said polymer is contained by 0.1 wt% or more and 30 wt% or less with respect to said liquid.

28. The ink for producing a carbon fiber according to claim 24, wherein the average particle size of said particles is 1 nm or more and 100 nm or less.